

What is claimed is:

1. An image forming apparatus comprising:

(a) an image carrying body on which a toner image is formed; and

(b) a transfer device provided in contact with the image carrying body for transferring the toner image formed on the image carrying body onto a transfer material,

wherein the following specific mutual relation with respect to surface property between the image carrying body and the transfer material is satisfied:

an angle of contact of the image carrying body for pure water when T second has passed after the pure water was dropped on a surface thereof is greater than an angle of contact of the transfer material for pure water when T second has passed after the pure water was dropped on a surface thereof,

where T represents a transit time of toner particles through a contact area of the image carrying body with the transfer device.

2. An image forming apparatus comprising:

(a) an image forming body on which a toner image is formed;

(b) a transfer device provided in contact with the image forming body for transferring the toner image formed on the image forming body onto a transfer material; and

(c) a lubricant coating mechanism comprising a brush roller provided in contact with a surface of the image forming body and a lump of lubricant which is pressed toward the brush roller, for coating a small amount of lubricant scraped off the lump of lubricant on the surface of the image forming body by rotating the brush roller,

wherein the brush roller is rotated in a direction such that a periphery thereof moves reversely to a progressing direction of the image forming body at a contact area with the image forming body, and is set in a state that a pressing load of the lump of lubricant against the brush roller is not less than 0.59 N and a coating amount of the lubricant for the image forming body is such that a consumption of the lump of lubricant per ten thousand times of image formation is 19.6 mg to 39.1 mg per a length of 1 cm along a rotary axis of the brush roller, and the following specific mutual relation with respect to surface property between the image forming body and the transfer material is satisfied:

an angle of contact of the image forming body for pure water when T second has passed after pure water was dropped on a surface thereof is greater than an angle of contact of the transfer material for pure water when T second has passed after pure water was dropped on a surface thereof,

where T represents a transit time of toner particles through the contact area of the image forming body with the transfer device.

3. The image forming apparatus of claim 2, wherein the angle of contact of the image forming body is greater than the angle of contact of the transfer material by  $5^{\circ}$  to  $100^{\circ}$  by the coating of the lubricant on the surface of the image forming body.

4. An image forming apparatus comprising:

(a) an image forming body on which a toner image is formed;

(b) a primary transfer device provided in contact with the image forming body for primarily transferring the toner image formed on the image forming body onto an intermediate transfer member;

(c) a secondary transfer device provided in contact with the intermediate transfer member for secondarily transferring the toner image primarily transferred on the intermediate transfer member onto a transfer material;

(d) a first lubricant coating mechanism for coating a lubricant on a surface of the image forming body; and

(e) a second lubricant coating mechanism for coating a lubricant on a surface of the intermediate transfer member,

wherein the first lubricant coating mechanism comprises a first brush roller provided in contact with a surface of the image forming body, and a lump of lubricant which is pressed toward the first brush roller for coating a small amount of lubricant scraped off the lump of lubricant by a rotation of the first brush roller onto the surface of the image forming body, and the second lubricant coating mechanism comprises a second brush roller provided in contact with a surface of the intermediate transfer member for coating a small amount of lubricant scraped off the lump of lubricant by a rotation of the second brush roller onto the surface of the intermediate transfer member,

wherein the first brush roller in the first lubricant coating mechanism is rotated in a direction such that a periphery thereof moves reversely to a progressing direction

of the image forming body at a contact area with the image forming body, and is set in a state that a pressing load of the lump of lubricant against the first brush roller is not less than 0.59 N, and a coating amount of lubricant for the image forming body is such that a consumption of the solid lubricant per ten thousand times of image formation is 19.6 mg to 39.1 mg per a length of 1 cm along a rotary axis of the first brush roller,

wherein the second brush roller in the second lubricant coating mechanism is rotated in a direction such that a periphery thereof moves in the same direction as a progressing direction of the intermediate transfer member at a contact area with the intermediate transfer member, and is set in a state that a pressing load of the lump of lubricant against the second brush roller is not less than 0.29 N and a coating amount of lubricant for the intermediate transfer member is such that a consumption of the solid lubricant per ten thousand times of image formation is 5.0 mg to 19.5 mg per a length of 1 cm along a rotary axis of the second brush roller,

wherein the following specific mutual relation (i) with respect to surface property between the image forming body and the intermediate transfer member is satisfied:

an angle of contact of the image forming body for pure water when T1 second has passed after pure water was dropped on the surface is greater than an angle of contact of the intermediate transfer member for pure water when T1 second has passed after pure water was dropped on the surface,

where T1 represents a transit time of toner particles through the contact area of the image forming body with the intermediate transfer member, and

wherein the following specific mutual relation (ii) with respect to surface property between the intermediate transfer member and the transfer material is satisfied:

an angle of contact of the intermediate transfer member for pure water when T2 second has passed after pure water was dropped on the surface is greater than an angle of contact of the transfer material for pure water when T2 second has passed after pure water was dropped on the surface,

where T2 represents a transit time of toner particles through the contact area of the intermediate transfer member with the transfer material.

5. The image forming apparatus of claim 4,

wherein the angle of contact of the image forming member is greater than the angle of contact of the

intermediate transfer member by  $5^{\circ}$  to  $30^{\circ}$  by the coating of the lubricant on the surface of the image forming body, and the angle of contact of the intermediate transfer member is greater than the angle of contact of the transfer material by  $5^{\circ}$  to  $90^{\circ}$  by the coating of the lubricant on the surface of the intermediate transfer member.

6. An image forming apparatus comprising:

(a) an image forming body on which a toner image is formed;

(b) a primary transfer device provided in contact with the image forming body for primarily transferring the toner image formed on the image forming body onto an intermediate transfer member;

(c) a secondary transfer device provided in contact with the intermediate transfer member for secondarily transferring the toner image primarily transferred on the intermediate transfer member onto a transfer material, wherein toner particles adhering to the secondary transfer device are again transferred onto the intermediate transfer member by an electric field to remove the toner particles; and

(d) a lubricant coating mechanism comprising a brush roller provided in contact with a surface of the secondary transfer device, and a lump of lubricant which is pressed toward the brush roller, for coating a lubricant on a surface of the secondary transfer device,

wherein the brush roller is rotated in a direction such that a periphery thereof moves in the same direction as a progressing direction of the secondary transfer device at a contact area with the secondary transfer device, and is set in a state that a pressing load of the lump of lubricant against the brush roller is not less than 0.29 N, and a coating amount of lubricant for the secondary transfer device is such that a consumption of the solid lubricant per ten thousand times of image formation is 5.0 mg to 39.6 mg per a length of 1 cm along a rotary axis of the brush roller, and the following specific mutual relation with respect to surface property between the intermediate transfer member and the secondary transfer is satisfied:

an angle of contact of the secondary transfer device for pure water when T second has passed after pure water was dropped on a surface thereof is greater than an angle of contact of the intermediate transfer member for pure water



when T second has passed after pure water was dropped on a surface thereof,

where T represents a transit time of toner particles through the contact area of the intermediate transfer member with the secondary transfer device.

7. The image forming apparatus of claim 6, wherein the angle of contact of the secondary transfer device is greater than the angle of contact of the intermediate transfer member by  $5^{\circ}$  to  $40^{\circ}$  by the coating of the lubricant on the surface of the secondary transfer device.

8. The image forming apparatus of claim 7, wherein the coating amount of lubricant is adjusted by adjusting the pressing load of the lump of lubricant against the brush roller.

9. The image forming apparatus of claim 8, wherein a magnitude of the angle of contact of the intermediate transfer member is adjusted by adjusting the surface roughness of the intermediate transfer member.

10. The image forming apparatus of claim 8, wherein a magnitude of the angle of contact of the intermediate transfer member is adjusted by to adjust the magnitude of the angle of contact of said intermediate transfer member by the reforming of the surface of the intermediate transfer member for wettability by a plasma processing.